

## REMARKS

The last Office Action of May 21, 2003 has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-24, 27-30, 32 and 33 are pending in the application. No claims have been amended, canceled or added.

Claims 1-4, 6-15, 17 and 18 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 5,931,754 (hereinafter "Stief").

Claims 19-22, 27-30, 32 and 33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Stief in view of Smith of record.

It is noted with appreciation that claims 5, 16, 23 and 24 are indicated allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. However, applicants wish to defer amendments to these dependent claims in view of the arguments presented below regarding claim 1, 28 and 32

### **REJECTION OF CLAIMS 1-4, 6-15, 17, 18 UNDER 35 U.S.C. §102(b) AS BEING ANTICIPATED BY STIEF**

The rejection under 35 U.S.C. 102(b) is respectfully traversed.

The present invention, as set forth in claim 1, is directed to a chain tensioner which is constructed to adjust the damping action upon the piston.

Although a soft damping action is desired to avoid loud noises, there is associated therewith the problem that hard chain knock may force the piston far enough into the pressure chamber that ultimately the piston can no longer be sufficiently dampened in the presence of rapid succession of chain knocks (compare [0005] of the instant specification). In accordance with the present invention, the damping behavior of the chain tensioner is controlled in dependence on the pressure in the pressure chamber by providing a control member which **reduces** a leakage gap in size, when the pressure in the pressure chamber increases, i.e. exceeds a critical level. As a result, the amount of hydraulic fluid, escaping the pressure chamber is **decreased** so that the characteristic damping curve of the chain tensioner is made **harder** to prevent the piston from moving excessively into the pressure chamber, so that the damping function is retained.

The Stief reference describes a tensioner which includes a non-return valve (7) that open a passageway, when the piston (2) moves out, to allow intake of fluid, and closes the passageway, when the piston (2) moves in, whereby fluid is able to escape through a leakage gap (14). The non-return valve (7) has a same function as the check valve (6) of the present invention, namely to open or close the passageway in dependence on the movement of the piston. In contrast thereto, the present invention includes a control member which is responsive to a pressure in the pressure chamber and operates such as to reduce the leakage gap, when the pressure in the pressure chamber exceeds a critical level. In other words, as the piston moves in, the control member may still retain its original

position (check valve 6 closes), and moves only toward the other valve seat, when the pressure in the pressure chamber is too high, thereby reducing the amount of fluid through the leakage gap. The capability to reduce the size of the leakage gap in response to an increase in pressure in the pressure chamber is neither taught nor suggested in Stief.

Withdrawal of the rejection of claims 1-4, 6-15, 17 and 18 under 35 U.S.C. §102(b) is thus respectfully requested.

**REJECTION OF CLAIMS 19-22, 27-30, 32, 33 UNDER 35 U.S.C. §103(a) AS  
BEING UNPATENTABLE OVER STIEF IN VIEW OF SMITH**

The rejection under 35 U.S.C. 103(a) is respectfully traversed.

The Stief reference has been discussed in the passage under the previous heading, and the same arguments are applicable here.

The Smith reference is directed to a hydraulic tensioner having a piston slidably received in a cylinder, and a pressure relief valve positioned in the nose of the piston. The valve moves away from its seat, when the pressure in the pressure chamber exceeds a predetermined maximum level, so as to release fluid. The Smith reference substantially corresponds to the admitted prior art discussed in the instant specification (paragraph [0003] of the instant specification), and thus describes a construction that entails an action that the present invention, in fact, tries to prevent. While in the present invention, the construction of the chain tensioner **reduces** an escape of hydraulic fluid from the

pressure chamber, as the size of the leakage gap is reduced so as to make the damping action of the chain tensioner **harder**, the Smith reference **promotes** an escape of flow of fluid from the pressure chamber so that the damping action becomes indeed **softer**.

For the reasons set forth above, it is applicant's contention that neither Stief nor Smith, nor a combination thereof teaches or suggests the features of the present invention, as recited in claims 28 and 32.

As for the rejection of dependent claims 27, 29, 30 and 33, these claims depend on claims 28 and 32, respectively, share their presumably allowable features, and therefore it is respectfully submitted that these claims should also be allowed.

Withdrawal of the rejection of claims 19-22, 27-30, 32 und 33. under 35 U.S.C. §103(a) and allowance thereof are thus respectfully requested.

### CONCLUSION

Applicant believes that when the Examiner reconsiders the claims in the light of the above comments, she will agree that the invention is in no way properly met or anticipated or even suggested by any of the references however they are considered.

In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

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